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Assessing the Supply Chain Intelligence Practices of Small Medium Enterprises in Malaysia

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Abstract

Small and medium enterprises (SMEs) represent the backbone of economic development of any country. In a turbulent dynamic market and changing environment, SMEs need to gain strategic information on its environments because failure to do so might pose a threat to firm's survival. Implementing supply chain intelligence (SCI) as a structured tool in gathering and analyzing information from 360-degree view of business activities is critical to businesses strategic decisions and performance in surviving and competing in dynamic markets. In spite of increasing interest and study in intelligence, discussion about the concept and its potential application to the SME sector was minimal from mainstream literature. Thus this study examines the level and extent of SCI practices amongst SMEs in strategic decisions and its contribution to enhance businesses and supply chain performance.

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Keywords: Competitive Intelligence; Supply Chain Intelligence; SMEs Performance

1. Introduction

According to ASEAN (2012), small and medium enterprises (SMEs) represent more than 95% of all business enterprises which are nevertheless major actors in economic developments of a country. In Malaysia, 99.2% of total

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business establishments are SMEs (SME Directory, 2014). While larger firms have extensive capital and financing to become strategically competitive and dominant in the market, SMEs have much more constraint and easily prey for their survival. In realising this issue, there are many Malaysian government efforts has been centred on SMEs and included as one of the main agenda items in the 10th Malaysian Plan (2011 – 2015) to ensure its competitiveness in any industry. Thus, SCI may provide a solid basis as a strategic tool for firms, especially SMEs, to remain informed about their competitive environment in order to stay ahead of competition and face myriad global challenges. SCI provides a structured monitoring and investigating tools for fast and reliable strategic information on supply chain activities and external environments such as suppliers, customers, governments, technology, and economics to stay ahead of their competitors (Du Toit, 2003; Gilad, 2011).

While it is acknowledged that all businesses do collect intelligence information, it is not being practiced structurally and optimally in SMEs. Many previous studies on intelligence have been intended for larger firms (Guimaraes, 2000; Nitse et al, 2003; Hodges, 2005; Wilkins, 2007; Calof and Wright, 2008; Gilad, 2011). Usually larger firms have high capability in financing intelligence activities such as sophisticated intelligence tools with more centralized intelligence unit. Whereas smaller firms may lack the resources such as financial and human capital needed to engage sophisticated SCI networks. A study by Groom and David (2001) of 139 small businesses in the US shows that small businesses are less likely to engage in formal or structured market research activities and are generally less informed about macro environmental conditions than older or larger firms. This might be attributable on why research on intelligence in SMEs are lack and very minimal in mainstream (West et al., 2006; Saayman et al. 2008; Smith et al., 2010; Yap & Rashid, 2011).

Despite the limitation posed by incomprehensive financial affairs, low competitiveness, insufficient human resources and incomplete enterprise, the practice of intelligence is more of a challenge for SMEs than bigger businesses (Frion & Yzquierdo-Hombrecher, 2009; Smith et al, 2010). While larger firms have more advantage in terms of good financial capital which makes them affordable to learn from mistake, there is no room for SMEs to make mistake because it gives more impact to them since every penny of its counted in ensuring their survival in the market (Calof, 2003). Chang et al. (2011) found that in spite of smaller in size, SMEs do have advantages such as management flexibility, strong reactive ability, resilience and vitality to compete with both local and international enterprises. It is further noted in the study by Zha and Chen (2009) that conclude the important of intelligence as a mechanism SMEs can adopt to compete globally. Gaining these insights shows the critical need of SCI to businesses in Malaysia especially SMEs in order to stay ahead of competition and its support of the country drive to achieve higher economic status. Although few studies reveal the benefits of SCI and firm performance (Jaworski &Wee, 1993; McGonagle and Vella, 1996; GIA, 2004; Badr et al., 2006), not much has been done to determine the impact of SCI specifically in SMEs context.

Therefore, this study aims to understand the important of SCI as a strategic tool to create, accumulate and disseminate intelligence which is deemed essential for SMEs performance and economic growth. The focus of the study is related to; i. concept of SCI and its activities in the context of SMEs, ii. SCI contribution to SMEs competitive advantage, and iii. SCI impacts to SMEs performance. Therefore, the objectives of this study are:

(i) How SMEs perform and manage their SCI activities?
(ii) To what extent SCI contributes to SMEs competitive advantage?
(iii) To what extent SCI contributes to SMEs performance?

2. Supply chain intelligence concepts and definition

Intelligence is an amalgam of disciplines and evolved from economics, marketing, military theory, information science and strategic management (Juhari & Stephens, 2006). According to Juhari and Stephens (2006), the technology explosion of the 1990s probably stimulated the notion of intelligence being something entirely new or even revolutionary. Intelligence then became a term that encapsulated all activities which involved monitoring and acting upon information in order to achieve competitive sustainability.

Imperatively, competing in today's business environment precipitates the need for successful integration and collaboration strategies among supply chain partners. SCI provides broader view of intelligence on the dynamic

relationship of supply chain integration for making better business decisions. It reaches organization's internal process, external environment, to include supply chain partners. Thus, SCI has been viewed as a new initiative that allows the leveraging of the firms internal and external information assets for making better business decisions; by applying the discipline and ethics of intelligence process to the operations of a global supply chain (Wilkins, 2007). SCI is defined "a set of systematic intelligence process about opportunities or developments that have the potential to affect the individual firms and their supply chain network as a whole towards improving long-term performance" (Jaharuddin et al. (2014; 2015).

In other words, supply chain intelligence (SCI) provides an analysis of the implications of marketplace change by detecting, anticipating and understanding the competitive environment and supply chain relationship that aids corporate leadership in strategic decisions (Fahey, 2007; Gilad, 2011). In fact without realizing it, SCI approach has been engaged by many organizations to improve their organizational performance and enhance competitiveness in the marketplace.

3. SCI as competitive advantage of SMEs

The modern business environment is characterized by stiff competition, rapid technological advancements, and changing requirements of customers and employees. To grow and survive in this turbulent environment and advanced technology, SMEs must invest in long-term competitiveness. SMEs' owner-managers must make informed decisions to survive in the competitive environment (Temtime, 2008). Prior (2007) emphasizes that gaining a competitive advantage presents an enormous challenge for SMEs. This is because SMEs have many competitors offering similar products or services and operating in the same market and location. Therefore, external environmental information is critical to the survival and growth of SMEs (Yap & Rashid, 2011). According to Akhtar, Raees and Salaria (2011), globalization has made it easy for enterprises to import and export and this has led to increased competition. Yap and Rashid (2011) conclude that intelligence helps in decision making and offer a competitive advantage to an enterprise. A study of 85 firms by Subramaniam and Ishak (1998) to measure the benefit of intelligence to organizations revealed that firms having advanced systems to monitor their competitors' activities exhibited greater profitability than those that did not have such systems. The contribution of SCI to firm's performance is also evident when most corporate victories resulted from well-designed products and services, hard-won marketing campaigns, and the strategic use of intelligence, while most failures come from a combination of bad timing, poor judgment, and misuse, or insufficient use of SCI (Fuld, 1995).

SCI is a source of competitive advantage because it utilizes both competitive intelligence and supply chain management views. According to resource-based perspective, the existence of the SCI function itself can be argued for its rent generating capabilities due to its unique disciplinary expertise and skills developed over time by SCI personnel about the environment, supply chain network and competitors which is difficult to be imitated or replicated by other firms. Information is factual raw data (numbers and statistics), on the contrary, intelligence is a collection of information pieces which have been filtered, distilled, and analyzed and turned into something that can be acted upon (Kahaner, 1997). In other words, a particular set of routines by the SCI personnel can lose their value if they can be readily replicated or imitated by competitors (Teece et al., 2000). Since SCI processes involve data gathering, data analysis and data dissemination, the probability of effectively replicating these routines is highly unlikely in a short time due to extreme tacitness of these processes. Meanwhile, a supply chain itself contains multiple link activities and processes, where the uniqueness is resistant to competitive pressures and difficult to be imitated by others (Porter, 1995), unlike an isolated activity and process of a single organization which can be easily duplicated by competitors. As such, the concept of SCI is strongly related as a source of competitive advantage for the firm.

Researchers have identified the following benefits of intelligence (Wright et al, 2009; Nasri, 2010; Johns and Van Doren (2010):

- Enhancing the enterprise's competitiveness
- Predicting, with a high level of trust, the business environment's evolutions, supply chain activities, competitors' actions, customers' requirements and even influences generated by political change

- Providing better support for the strategic decision-making process
- Revealing opportunities and threats by surveying weak signals and early warnings
- Processing and combining data and information to produce knowledge and insights on competitors
- Satisfying the information needs of decision-making and problem solving, and decreasing reaction time
- Devising marketing strategies

4. SCI and performance of SMEs

The interest in organizational performance is not new and has been widely debated and criticized on how it can best be measured within and among a variety of disciplines such as accounting, operations management, marketing, human resource management, international business, organizational behavior, information systems and strategic management (Neely, 1999). Thus, the adoption of organizational performance measurement will be different depending on the field of study and the research questions (Neely, 2005). A meaningful way to understanding the abstract idea of effectiveness is to consider how researchers have operationalized and measured the construct in their work.

Similarly, a growing interest in the area of intelligence amongst academics and practitioners has been accompanied by a high degree of skepticism regarding its ability to effectively support business performance (Bernhardt, 1996). While intelligence becomes more established as a professional discipline, there is a need to devise ways of measuring and quantifying the results of its gathering operations. Ghoshal & Kim (1986) argue that intelligence units must earn legitimacy on the grounds of directly supporting business performance. Without any objective measures on the value of intelligence even though appears self-evident to practitioners, its bottom line contribution will continue to be taken more on "…inner faith than outer confidence" (Solomon, 1996). Kahaner (1997) states that SCI activity does not have to be directly linked to business performance indicators because it is extremely difficult to measure and identify a specific intelligence that brought the benefit. Although SCI has brought value to the organization, often the benefits can only be identified several years after the actual decision (GIA, 2004b). However, a contribution of intelligence to business performance has been reported by Business Week (2001) magazine, and PricewaterhouseCoopers (2002) that views SCI as critically important resource to provide strategic information at the right time to the right people. Those placing a premium on SCI information are outperforming their peers on sustained revenue growth, gross margins, and a number of other key performance measures (Reuters, 2001; Market Wire, 2007; Gilad; 2011).

5. Methodology

A quantitative research method will be used for collecting detailed information in accordance with the requirements of the study. This method is considered most suitable when conducting research on a broad scale, since results obtained through a well conducted statistical testing are safer for purposes of generalization. Regardless, research design and implementation decisions are made according to which methods best meet the practical demands of a particular inquiry (Patton, 1988).

The definition of small and medium sized firms (SMEs) is different according to countries. The typical definition is based on categorization by the maximum number of staff and annual turnover. In Malaysia, the SME classification criterion used by National SME Development Council was applied in order to classify firms according to the size variable. This new definition of SMEs was revised during 14th National SME Development Council Meeting on January 2014 to raise the qualifying threshold for sales turnover and employment of SMEs for all economic sectors in the country (SMECorp, 2015). The classification is further simplified into two simple categories: i. manufacturing, and ii. services & other sectors. With this, approximately more than 8,000 establishments will now be classified as SMEs, increasing the share of SMEs to total establishments from 97.3% currently to 98.5%. The details of a new definition are given in Table 1 below.

Table 1 New Definition of SMEs in Malaysia

CATEGORY	MICRO	SMALL	MEDIUM
Manufacturing	Sales turnover of less than **RM300,000** OR employees of less than **5**	Sales turnover from **RM300,000 to less than RM15 mil** OR employees from **5 to less than 75**	Sales turnover from **RM15 mil to not exceeding RM50 mil** OR employees from **75** to **not exceeding 200**
Services & Other Sectors	Sales turnover of less than **RM300,000** OR employees of less than **5**	Sales turnover from **RM300,000 to less than RM3 mil** OR employees from **5 to less than 30**	Sales turnover from **RM3 mil to not exceeding RM20 mil** OR employees from **30** to **not exceeding 75**

Source: SMECorp (2015)

The list of SMEs will be retrieved from the SMEs Corporation Malaysia (2014) and SMI Directories. Survey respondents selected for data collection consists of a number of SMEs in Kelang Valley, Johor and Penang. These states were identified as having a high percentage of SMEs (MOSTI, 2006). Participating firms were given two months to complete the questionnaires. The targeted respondents are the executive or manager of supply chain, purchasing, marketing or sales department who are involved in assessing strategic intelligence in their firm. Researchers will contact the identified respondents by phone, briefly explains about the study to be carried out that require their participations. Any targeted respondent who fails to cooperate or reasons of policy will be dropped from the study list. Since small business growth and viability is an integral part of overall economic health in Malaysia and abroad, it is hoped that the findings of this study could ultimately improve SMEs competitiveness and business performance as well as local, state, and national economies.

The questionnaire is divided into three sections. The first section concerning profile of organization/respondent to ensure a representative with reliable and sufficient background of SCI will be obtained. The second section is concerning the intelligence activities of the firm. The constructs were measured and assessed on a five-point Likert-type scale between 1 (Low) to 5 (High) based on the measurement range given to assess the level of agreement for each of the items. The third section involving the perceived performance from SCI contributions is developed by adopting the constructs of organizational performance by Tan et al., (1999) and APQC (2003), whereas the constructs of supply chain performance was developed by modifying and extending from supply chain literature. All research questions and objectives were answered by performing appropriate descriptive and inferential statistical analyses such as hierarchical and multiple linear regressions (MLR).

6. Conclusion

SMEs should become increasingly aware of the necessity to remain informed of their competitive environment (De Pelsmacker et al., 2005). Calof and Wright (2008) mentioned that there was clear evidence that the intelligence gathered are able to support decisions in many areas of corporate or business strategy, sales or business development, market entry decisions, product development, R&D/technology decisions, M&A decisions, joint venture decisions and regulatory/legal responses. Without proper planning of intelligence, businesses will find it almost impossible to compete in a global economy. Gilad (2011) reported that a majority of Fortune 500 companies fails to realize the full benefits of intelligence by not using it often enough or using it the wrong way. Effective SCI

is not only facilitates risk management by predicting, identifying, avoiding, transferring, spreading and controlling risks well, but also helps SMEs to enhance the capabilities of risk awareness and risk prevention.

The findings of this study can help provide useful information to SMEs practitioners and academicians who ponder the need and importance of SCI in gaining competitive advantage and strategic decisions. Since small business growth and viability is an integral part of overall economic health in Malaysia and abroad, it is hoped that the findings of this study could ultimately improve SMEs competitiveness and business performance as well as local, state, and national economies. In addition, it is hoped that this study as a platform for businesses and government towards streamlining systematic SCI database of firms in one particular country to ensure full information is available and easily accessible in Malaysia. Consequently, organizations might be able to have an up-to-date and easy access general data about the industry in which they may gain clearer understanding of the industry on how they fit in and predict future opportunity.

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References

Akhtar, S., Raees, R. and Salaria, M.R. (2011). The Impact of Firm, Location And Ownership Specific Factors on Foreign Market Performance of Pakistani SMEs. International Conference on Technology and Business Management, (March 28-30):5132-521.

APQC, American Productivity & Quality Centre (2003). Best-Practice Research Report, available at: http://www.apqc.org (accessed 20 October 2009).

Badr, A., Madden, E., and Wright, S. (2006). The Contribution of CI to the Strategic Decision Making Process: Empirical Study of the European Pharmaceutical Industry. Journal of Competitive Intelligence and Management, Vol. 3, No. 4, pp. 15-35.

Calof, J.L (2003). Competitive intelligence and the small firm—Requirements and barriers. Retrieved from http://www.sbaer.edu.Accessed on October 2007.

Calof J.L., and Wright S. (2008). Competitive intelligence: A practitioner, academic and inter-disciplinary perspective. European Journal of Marketing, Vol. 42, No. 7/8, pp. 717-730.

Chang, S.I., Wu, H.C. & Cho, C.M. (2011). The development of a digital divide assessment mechanism for SMEs: A perspective from the Taiwan manufacturing industry. Journal of Global Information Technology Management, 14(1):6–34

Du Toit, A. S. A. (2003). Competitive intelligence in the knowledge economy: What is in it for South African manufacturing enterprises?. International Journal of Information Management, Vol. 23, pp. 111-120.

Fahey, L. (2007). Connecting strategy and competitive intelligence: refocusing Intelligence to produce critical strategy inputs. Strategy & Leadership, 35(1), 4.

Frion, P. & Yzquierdo-Hombrecher, J. (2009). How to implement competitive intelligence in SMEs? Paper presented at Visio 2009, Vitoria-Gasteiz, Spain, 4&5 June.

Fuld, L. (1995). The new competitor intelligence the complete resource for finding, analyzing, and using information about one's competitors. New York: Wiley.

Gilad, B. (2011). Strategy without intelligence, intelligence without strategy. Business Strategy Series, Vol. 12, No. 1, pp. 4-11.

Global Intelligence Alliance (2004b). Measuring the benefits of competitive intelligence. GIA white paper 3/2004, available at: http://www.globalintelligence.com (accessed Dec 2008).

Global Intelligence Alliance (2005). Building strategic intelligence capabilities through scenario planning. GIA white paper 2/2005, available at: http://www.globalintelligence.com (accessed Dec 2008).

Groom, R.J., David, R.F. (2001). Competitive intelligence activity among small firms. Advanced Management Journal, 66(1), 12-20.

Guimaraes, T. (2000). The impact of CI and IS support in changing small business organizations. Logistics Information Management, 13(3), 117-125.

Hart, S. and Banbury, C. (1994). How strategy-making-processes can make a difference. Strategic Management Journal, 15(4), 251-269.

Hodges, C. (2005). Competitive Intelligence Overview: Feeding the Competitive Analysis process. ASQ World Conference on Quality and Improvement Proceeding, Vol. 59, pp. 441-445 (ABI/INFORM Global).

Jaharuddin, N.S., Mohamed, Z.A. and Sambasivan, M. (2014). Supply Chain Intelligence and Its Impact on Business Performance". International Journal of Economics and Management (IJEM), 8 (S):177-205.

Jaharuddin, N.S., Mohamed, Z.A. and Sambasivan, M. (2015). Supply Chain Intelligence in Business Organizations: A Malaysian Perspective. Pertanika Journal of Social Sciences and Humanities, Vol.23 (S).

Jaworski, B. and Wee, C.L (1993). Competitive Intelligence: Creating Value for the Organization. Final Report on Society of Competitive Intelligence Professionals (SCIP) Sponsored Research, Society of Competitive Intelligence Professionals: Vienna.

Juhari, A.S. and Stephens, D.P. (2006). Tracing the origins of competitive intelligence throughout history. Journal of Competitive Intelligence and Management, 3(4), 61-82.

Johns, P. and Van Doren, D.C. (2010). Competitive intelligence in service marketing: A new approach with practical application. Marketing Intelligence & Planning, 28(5), 551-570.

Kahaner, L. (1997). Competitive Intelligence. How to gather, analyze and use information to move your business to the top. New York, NY: Simon & Schuster.

Malaysia, 10th Malaysia Plan (2011 – 2015). Accessed on August 20, 2014. Available at https://www.pmo.gov.my/dokumenattached/RMK/RMK10_E.pdf

McGonagle, J.J. Jr., Vella C.M (1996). A New Archetype for Competitive Intelligence. US of America, Westport: Greenwood Publishing Group Inc.

Nasri, W. (2010). Competitive intelligence in Tunisian companies. Journal of Enterprise Information Management, 24(1), 53-67

Nitse, P.S., Parker, K.R. and Dishman, P.L. (2003). Multi-class interest profile: applications in the intelligence process. Marketing Intelligence & Planning, 21(5), 263-271.

Patton, M. Q. (1988). Paradigms and pragmatism. In D. M. Fetterman (Ed.), Qualitative approaches to evaluation in education: The silent scientific revolution, 116-137. New York: Praeger.

Pelsmacker, P.D., Muller, M.L., Viviers, W., Saayman, A., Cuyvers, L., Jegers, M. (2005). Competitive intelligence practices of South African and Belgian exporters. Marketing Intelligence & Planning, Vol. 23, No. 6, pp. 606-620.

Porter, M.E. (1995), On Competition, Boston: Harvard Business School Publishing.

Prahalad, C., & Hamel, G. (1990). The core competence of the corporation. Harvard Business Review, May -June, pp. 79-91.

Saayman, A., Pienaar, J., Pelsmacker, P.D., Viviers, W., Cuyvers, L., Jegers, M.and Muller, M-L. (2008). Competitive intelligence: construct exploration, validation and equivalence. Aslib Proceedings: New Information Perspectives, 60(4), 383-411.

SME Directory. (2014). About SMIs /SMEs**:** Overview of SMIs/SMEs. Available at: http://www.smibusinessdirectory.com.my/smisme-editorial/about-smisme/all-about-smisme.html (accessed August 2014).

Smith, J.R., Wright, S. & Pickton, D. (2010). Competitive intelligence programmes for SMEs in France: Evidence of changing attitudes. Journal of Strategic Marketing, 18(7):523–536

Subramanian, R. and Ishak, S.T.(1998). Computer analysis practices of US companies: an empirical investigation. Management International Review, 38(1), 7-23.

Teece, D.J., Pisano, G., and Shuen, A. (2000). Dynamic Capabilities and Strategic Management. In Nature and Dynamics of Organizational Capabilities, (pp.334-363). Oxford: Oxford University Press.

Temtime, Z.T. (2008). From operating efficiency to competitive edge: Lessons from small firms in Botswana. Strategic Change, 17(1):295-306

Wee, C.H. and Leow, M.L. (1994), "Competitive business intelligence in Singapore", Journal of Strategic Marketing, Vol. 2, pp. 112-139.

Wilkins, R.L. (2007). Competitive Intelligence: The New Supply Chain Edge. Supply Chain Management Review, Vol. 11, No. 1, pp. 18.

Wright, S., Eid, E.R. & Fleisher, C.S. (2009). Competitive intelligence in practice: Empirical evidence from the UK retail banking sector. Journal of Marketing Management, 25(9/10):941–964

Yap, C.S. and Zabid, A.R (2011). Acquisition and strategic use of competitive intelligence. Malaysian Journal of Library & Information Science, 16(1), 125-136

Zha, X. & Chen, M. (2009). Competitive intelligence monitoring in the risk prevention of SMEs. Journal of Service Science & Management, 3:230–235